Catalogue of American Amphibians and Reptiles.

Hardy, Laurence M. 1990. *Ficimia.*

Ficimia Gray
Southern Hook-nosed Snakes

Ficimia Gray, 1849:80. Type-species, *Ficimia olivacea* Gray, 1849, by monotypy.

Amblymetopon Günther, 1858: 7 (first mentioned on p.2) Type-species, *Amblymetopon variegatum* Günther, 1858 (= *Ficimia variegata* Garman, 1883 [=1884]), by monotypy.

• **Content**. Six monotypic species are recognized: *olivacea, publia, ramirezi, ruspator, streckeri,* and *variegata.*

• **Definition and Diagnosis**. Species of the genus *Ficimia* are characterized by: an upturned, sharp-edged rostral contacting the frontal; 17 rows (at midbody) of smooth dorsal scales, with single apical pits, no anal ridges; anal divided; loreal absent; 12-34 gulars; 5-8 supralabials, 5-8 infralabials; 4-10 dorsals contacting parietals; 1+2 temporals; 1 or 2 postoculars; 1 preocular; nasal divided below naris, divided or entire above naris; nasal separated from preocular and fused to first supralabial; internasals present or absent; mental separated from genials by mutual median contact of first infralabials; ventrals: 126-152 (males), 136-157 (females); subcaudals: 26-44 (males), 28-41 (females); dorsal body blotches:17-52 (males), 22-60 (females), or absent; caudal blotches: 6-18 (males), 7-20 (females), or absent; snout-vent length 100-415 (males), 115-378 (females); tail/total length x 100: 13.0-18.1 (males), 12.5-17.0 (females); 13-17 maxillary teeth; 7-10 palatine teeth; and 12-17 dentary teeth.

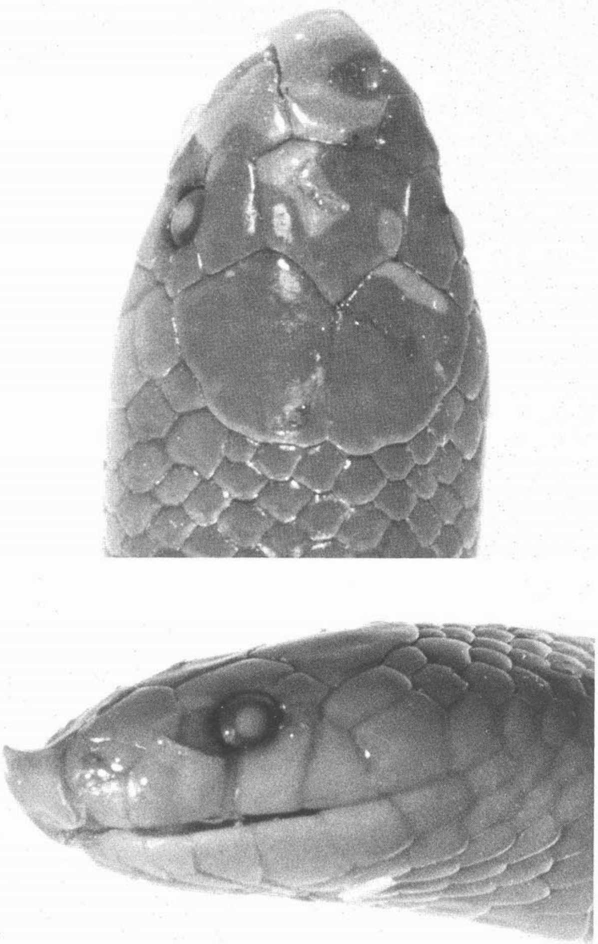
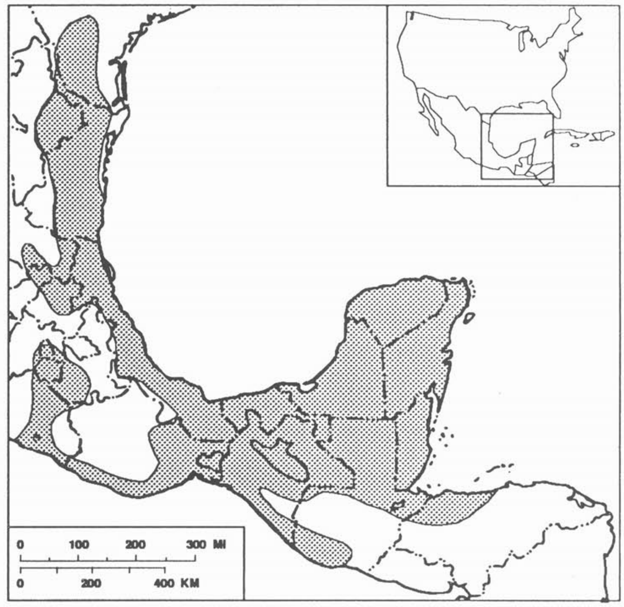


Figure 1. *Ficimia olivacea* (BMNH 1946.1.5-45). View of head.



Map. Distribution of the genus *Ficimia.*

Ficimia is the only genus of colubrid snakes with an upturned rostral contacting the frontal, flattened or concave dorsally (without a median keel), and with a sharp horizontal anterior edge.

• **Descriptions**. Jan (1862) described a new species (*F. elaiacroma*) instead of a new genus, which he considered, and included *Ficimia* in his Probletorhinidae as a link between the Calamaridae and Coronellidae. Garman (1884) described teeth, color, and scales, and gave a key to six species now recognized as: *Pseudoficimia frontalis, Gyalopion canum, Conopsis nasus, Ficimia variegata,* and *F. olivacea.* Cope (1891) described color, scales, teeth, and pupil. Generic characteristics are listed in Hoffmann (1890), Günther (1893), and Slevin (1934). Günther (1893) described the teeth (see Remarks). Cope (1895) used hemipenial characteristics in a key, and later (Cope, 1900) compared characteristics of lungs, hemipenes, and scales in *Ficimia* to those of *Gyalopion, Ogmius, Conopsis, Stenorhina,* and *Geagras;* he included information on habits, habitat, and geographic distribution. Taylor (1936)gave measurements of some head scales and notes on coloration in preservative for some species. Descriptions of juvenile color pattern are in Neill (1965, *F. publia*) and Günther (1885). Descriptions of skeletal modifications of the snout are in Haines (1967), the hyoid in Langebartel (1968), and the cochlear duct in Miller (1968). Preglottal structures are absent (Saiff, 1975). Other specific descriptions include those of Hardy (1975a, all species), Fouquette and Rossman (1963, *F. variegata*), Taylor (1949), and Werner (1890).

Original descriptions are as follows: *F. olivacea* Gray (1849), *F. variegata* (Günther, 1858), *F. publia* Cope (1866), *F. streckeri* Taylor (1931), *F. ruspator* Smith and Taylor (1941), and *F. ramirezi* Smith and Langebartel (1949).

• **Illustrations**. The hemipenis of *Ficimia olivacea* is illustrated in Cope (1895, 1900) and the cochlear duct in Miller (1968). Drawings of the head and anal region of *F. ornata* (= *F. publia*) and head of *F. olivacea* are in Duméril and Bocourt (1883). The hemipenis, vertebra, and maxilla of *F. olivacea* are in Dowling and Duellman (1978). A drawing of the head of *F. olivacea* is in Jan (1862).

Black and white photographs are in Neill (1965, *F. p. wolffsohni*), Taylor (1950, *F. streckeri*), Wright and Wright (1957, *F. streckeri*). The type specimens of the six recognized species are in Hardy (1975a). A color photograph of *F. publia* is in Villa et al. (1988). Photographs of habitat of *F. p. wolffsohni* are in Neill (1965).

• **Distribution**. *Ficimia* inhabits lowlands of southern Texas

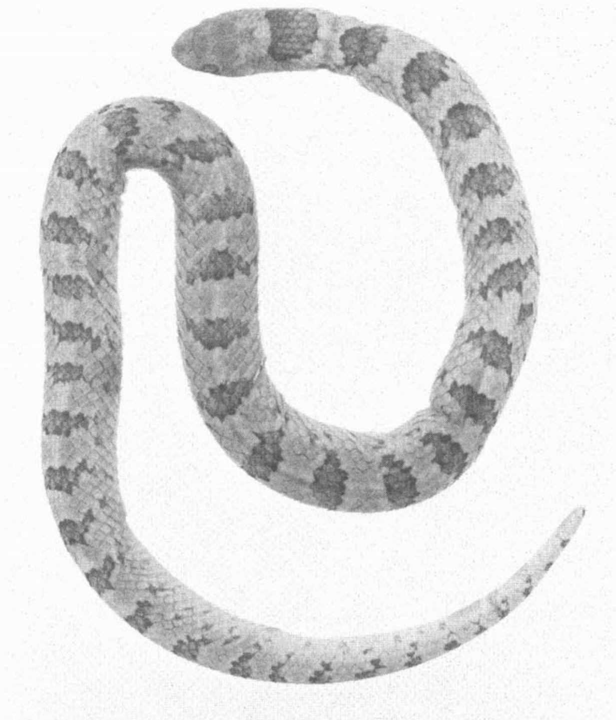


Figure 2. *Ficimia publia*, lectotype (USNM 16428), Yucatan.

through the Gulf coast of Mexico, the Yucatan peninsula, northern Guatemala, Belize, northwestern Honduras, and the Pacific coast from south-central Guatemala north to central Guerrero, including Morelos, and parts of México, Puebla, and the D. F., México. All records are below 1000 m in elevation and most of the range west of the isthmus of Tehuantepec is below 500 m. *Ficimia* is considered a northern low-land element limited by the Yzabal embayment of Guatemala and the Ulúa valley of Honduras (Stuart, 1957). It probably evolved in the northern Central American region (Stuart, 1958; Hardy, 1975b).

• **Fossil Record**. None (Romer, 1956).



• **Pertinent Literature**. Jan (1862) was the first to comment on the familial position of *Ficimia* as intermediate (with *Stenorhina*, *Cheilorhina* [=*Sympholis*], *Oxyrhina* [=*Chionactis*, part], and *Prosymna*) between *Calamaridae* and *Coronellidae*. Cope (1863), surprised by Jan's (1862) treatment of *Ficimia*, questioned erection of *Amblymetopon* by Günther (1858); he listed *Ficimia* with *Conopsis*, *Exorhina*, and *Sympholis* (due to the absence of internasals) and suggested that *Ficimia* is related to *Rhinostoma* (=*Phimophis*) and *Simophis*. Evolutionary relationships within *Ficimia* were discussed by Cope (1866). Peters (1869) thought *Ficimia* and *Conopsis* might be congeneric and questioningly synonomized *Gyalopion canum* in *Ficimia publia*. Troschel (1877) included *Ficimia* in the Calamaridae. Garman (1884) noted the similarity of the rostrals of *Ficimia* (and *Gyalopion* and *Pseudoficimia*) to those of *Heterodon*. Cope (1887) regarded *Amblymetopon* a synonym of *Ficimia*. Cope (1891) combined *Ficimia* (and *Ogmius* and *Conopsis*) with *Gyalopium* (=*Gyalopion*). Boulenger (1886) placed *F. publia* in *Gyalopium* (=*Gyalopion*) but later (1894) included *Gyalopion canum* and *Amblymetopon* in synonymy, but also included *Amblymetopon* in a key in the *F. olivacea* account. Palacky (1898) compared geographic distribution of *Ficimia* to those of several other genera. The use of *Ficinia* by Palacky (1898) was probably a typographical error; he used *Ficimia* also. Cope (1900) gave a summary of characteristics and generic comparisons and concluded that *Ficimia* had a nearctic origin. Slevin (1934) gave a key and generic definition. Comments on habits and habitats, related to speciation, are in Taylor (1936). Generic relationships are discussed in Hardy (1975b), Stickle (1943), and Mulaik and Mulaik (1943). Romer (1956) included *Gyalopion* in *Ficimia*. Geographic variation, habitat, and predation on *F. olivacea* by *Micrurus* were discussed by Martin (1958).

Discussion of geographic variation and a new subspecies description (*F. p. taylori*) are in Smith (1947). An intergrade between *F. p. publia* and *F. p. taylori* was reported by Hensley and Smith (1962). Comparisons of some characteristics of color and pattern between *F. publia* and *F. ramirezi* are in Smith and Langebartel (1949). Data on habitat and morphology, and comments on the validity of *F. ruspator* are in Smith (1943). Taylor (1949) and Smith et al. (1952) used relative eye size as evidence that *F. olivacea* and *F. streckeri* are specifically distinct. Neill (1960) commented on the influence of agriculture on the habitat of *F. publia*. The distribution and possible northward dispersal of *F. publia* was suggested by Duellman (1965); the southern boundary in Guatemala and Honduras was discussed by Stuart (1957). Biogeographic relationships of *Ficimia* were discussed by Stuart (1958) and later summarized by Savage (1966). Reproductive data are in Greer (1966). Haines (1967) discussed skeletal modifications of the snout region of *Ficimia* and other cryptozoic genera. Marx and Rabb (1970) suggested that the modified cephalic scutellation of *Ficimia* is derived from their state I (9 head shields) and they (1972) made many comparisons between *F. publia* and several other genera. The shape of the rostral was compared to that of species of *Typhlina* by McDowell (1974).

Statements about the habitats are in Cope (1900), Stuart (1935), Taylor (1936), Smith (1943), Martin (1958), Neill (1960), and Henderson and Hoevers (1975). Thomas (1974) named biotic provinces in Texas occupied by *F. streckeri*. Velasco (1895, 1896, 1898) listed the species found in Campeche, Colima, and Chiapas, respectively.

Recent systematic treatments are in Hardy (1970, 1975a, 1975b), Smith and Taylor (1941), and Taylor (1931, 1936). Grobman's (1978) reference to *Ficimia* was actually to *Gyalopion quadrangularis*.

• **Key to Species**.

1a. Dorsal markings absent......... *olivacea* (219)
1b. Dorsal markings present.............................2

Figure 3. *Ficimia ramirezi*, holotype (UIMNH 3767).

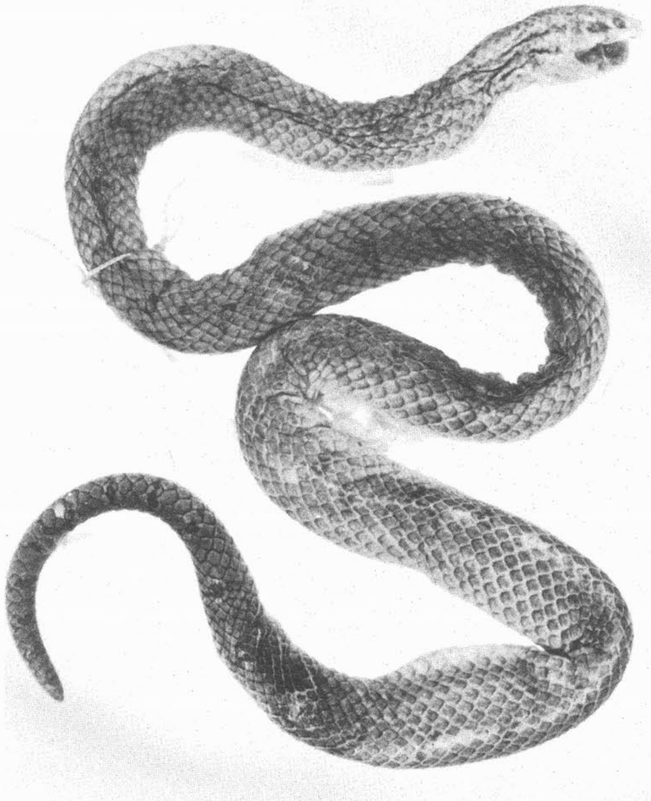


Figure 4. *Ficimia variegata*, syntype (BMNH 1946.1.6-78), "Mexico."



Figure 6. *Ficimia variegata*, syntype (BMNH 1946.1.5-49), "Mexico."

All photographs by author.

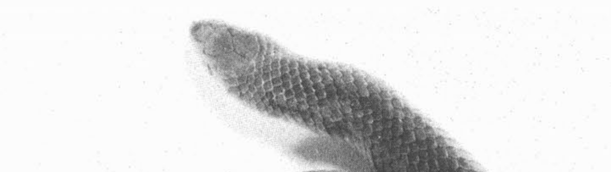


Figure 5. *Ficimia olivacea*, syntype (BMNH 1946.1.5-44), "Mexico."



Figure 7. *Ficimia ruspator*, holotype (UIMNH 25064), Guerrero.

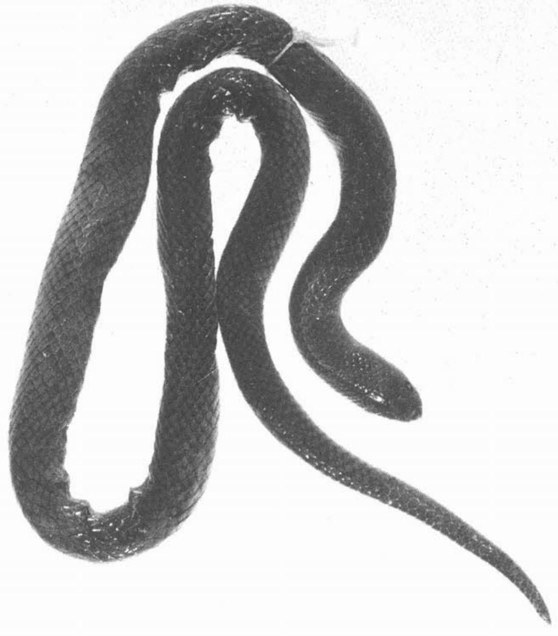


Figure 8. *Ficimia olivacea*, syntype (BMNH 1946.1.5-45), "Mexico."

2a. Dorsal bands short (one scale or fewer in length); one postocular.. *streckeri* (181)
2b. Dorsal bands longer than one scale in length; two postoculars...3

3a. Length of interspaces between dorsal blotches two or more times length of blotches................................ *ramirezi* (228)
3b. Length of interspaces between dorsal blotches less than two times length of blotches..4

4a. Dorsal body blotches 42 or more...5
4b. Dorsal body blotches fewer than 42..................... *publia* (254)

5a. Internasals absent.. *variegata* (269)
5b. Internasals present.. *ruspator* (243)

• **Remarks**. Günther (1893) described the teeth as "...subequal in size, not grooved" in a generic description. He included only *Ficimia publia* and *F. olivacea*. In both species the teeth are variable in size; in *F. publia* all maxillary teeth are faintly grooved whereas in *F. olivacea* individual variation ranges from no grooved teeth to grooves on all maxillary teeth (Hardy 1975a). Gray (1849) used the spelling *Ficimia* in the original description (page 80) and also in the geographical index (p. xiii); however, he used the spelling *Ficinia* in the systematic index (p. xv), in the synopsis of colubrinia genera (p. 39), and in the index (p. 121). The latter are probably typographical errors since the main account contains the spelling *Ficimia*.

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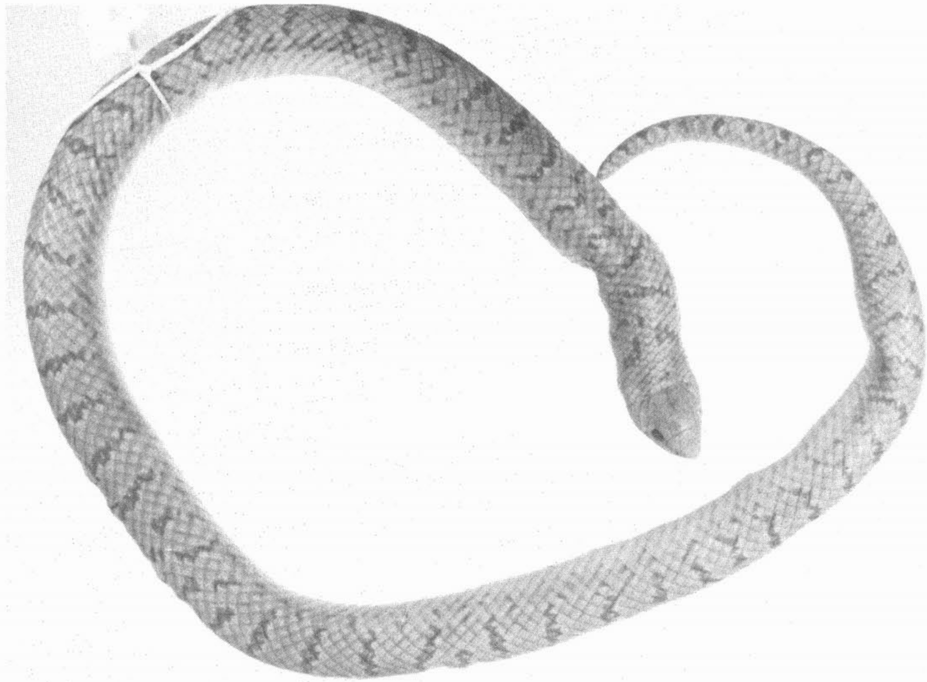


Figure 9. *Ficimia streckeri*, holotype (KU 4140), Texas.

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